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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GEORGE H. BUABBUD

Appeal 2008-5849
Application 09/932,867
Technology Center 2600

Decided:[1] May 18, 2009

Before KENNETH W. HAIRSTON, JOHN A. JEFFERY,
and CARL W. WHITEHEAD, JR., *Administrative Patent Judges*.

WHITEHEAD, JR., *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

Appellant appeals under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-5 and 7 (*see* App. Br. 1). We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

STATEMENT OF THE CASE

Appellant invented a method and apparatus to conduct simultaneous communications over a single optical fiber by employing two different operating frequencies.[2]

Claim 1, which further illustrates the invention, follows:

> 1. A method of providing TV signals to multiple subscribers and bidirectional telephonic communications to a multiplicity of subscribers through a single optical fiber comprising the steps of:
>
> transmitting light at a first wavelength carrying plain old telephone service telephonic signals from a first plurality of telephone related devices and at a second wavelength carrying TV signals from a TV signal source through an optical fiber from a first end to a second end;
>
> receiving said first wavelength of light and generating first electrical signals within a first frequency band and representative of said plurality of plain old telephone service telephonic signals;
>
> receiving said second wavelength of light and generating second electrical signals within a second frequency band and representative of said TV signals;
>
> transmitting said plain old telephone service telephonic electrical signals to a plurality of telephone related devices and said second electrical signals to a plurality of TV signal receiving devices;
>
> generating a plurality of return electrical plain old telephone service telephonic signals at said first frequency band

[2] *See generally* Spec. 1.

representative of return telephonic information and a plurality of TV related electrical signals at a third frequency band representative of TV related information from said plurality of subscribers;

multiplexing said electrical signals carrying said return plain old telephone service telephonic signals at said first frequency band and said TV related electrical signals carrying said TV related information at said third frequency band;

receiving said multiplexed electrical signals and generating light at said first wavelength representative of said return plain old telephone service telephonic signals and said TV related information;

transmitting light at said first wavelength and carrying said return plain old telephone service telephonic signals and said TV related information through said optical fiber from said second end to said first end;

receiving said light carrying said return plain old telephone service telephonic signals and said TV related information and generating a plurality of third electrical signals representative of said return plain old telephone service telephonic signals and a plurality of fourth electrical signals representative of said TV related information; and

transmitting said third electrical signals to said first plurality of telephone related devices and said fourth electrical signals to said TV signal source.

The Rejections

The Examiner relies upon the following prior art references as evidence of unpatentability:

Beveridge	US 5,615,246	Mar. 25, 1997
Feldman	US 6,577,414 B1	Jun. 10, 2003 (filed Feb. 19, 1999)

Kitazawa et al., *Fiber-Optic Subscriber System Based on Passive Optical Network Architecture*, 43 HITACHI REV. 53 (1994).

The Examiner rejected claims 1-5 under 35 U.S.C. § 103(a) as being unpatentable over Beveridge and Feldman.

The Examiner rejected claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Beveridge, Feldman, and Kitazawa.

Rather than repeat the arguments of Appellant or the Examiner, we refer to the Briefs and the Answer for their respective details. In this decision, we have considered only those arguments actually made by Appellant. Arguments which Appellant could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Appellant argues that the combination of Beveridge and Feldman fails to disclose many features of the claimed invention, such as failing to disclose receiving first and second wavelengths of light through an optical fiber as required by claim 1 (App. Br. 11). The Examiner argues that Feldman discloses that wavelengths of the broadcast and targeted services must be different wavelengths in order to prevent interference between the signals, and therefore the claim limitations are met by the combination of Beveridge and Feldman (Ans. 10).

ISSUE

1. Has Appellant shown that the Examiner erred in finding that the combination of Beveridge and Feldman discloses a method of providing TV and telephonic signals to multiple subscribers over a single optical fiber by employing two light transmitted signals at two wavelengths?
2. Has Appellant shown that the Examiner erred in finding that the combination of Beveridge, Feldman, and Kitazawa discloses an apparatus

that will convert light transmitted signals at two wavelengths into a unidirectional electrical TV signal and a bi-directional plain old telephone service electrical signal?

FINDINGS OF FACT

Beveridge

1. Figure 5 of Beveridge

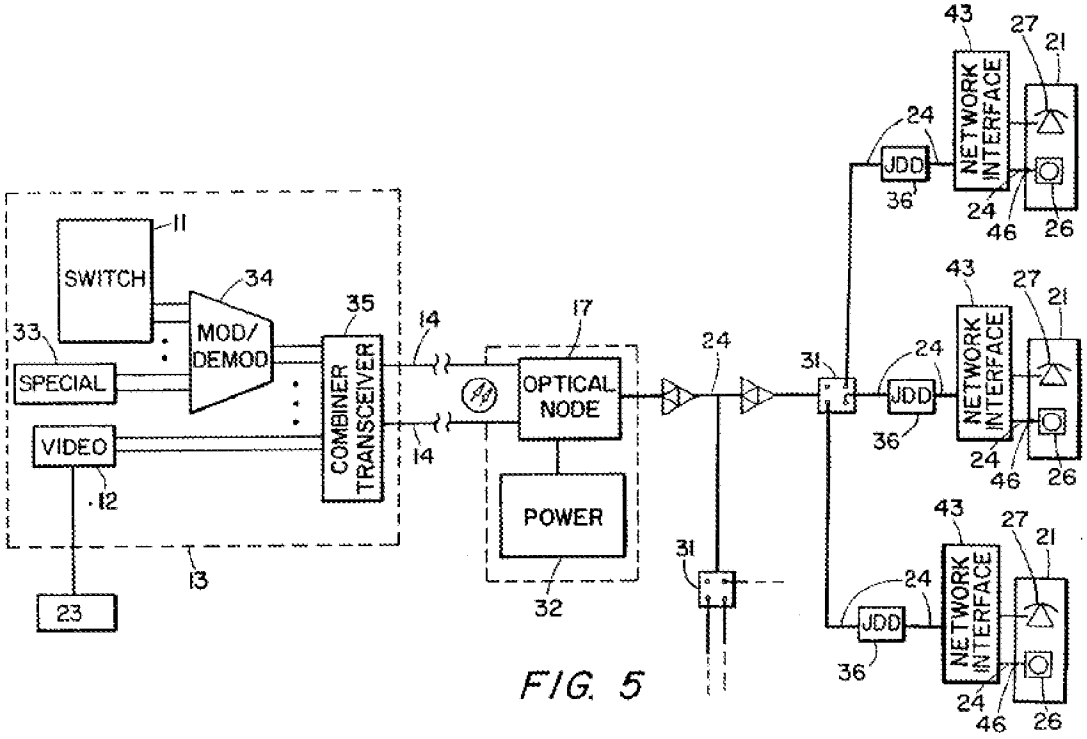

FIG. 5

Figure 5 discloses a fiber/coax transport architecture where telephony and video signals are transported through a common network (col. 8, ll. 19-21).

2. The central office (13) includes video transmission equipment (12), special services equipment (33) and a telephony switch (11). Telephony signals from the switch (11) and special services equipment (33) are supplied to the RF modulator/demodulator unit (34). Video signals from the video transmission equipment (12) are combined with telephony signals

from the RF modulator/demodulator unit (34) in the combiner transceiver (35) unit (col. 8, ll. 21-31).

3. Optical signals from the combiner transceiver are sent to an optical node (17) over fiber optic cables (14) wherein the signal is converted to electrical signals sent over coaxial cables (24) (col. 8, ll. 44-46).

4. The combined telephony and video signals are directed to the network interface (43) via a power tap (31) and a jamming detection and disconnection device (36). Telephony and video signals are supplied to the telephone (27) and television units (26), respectively, at the subscriber's premises (21) (col. 8, ll. 47-60).

Feldman

5. Figure 1 of Feldman

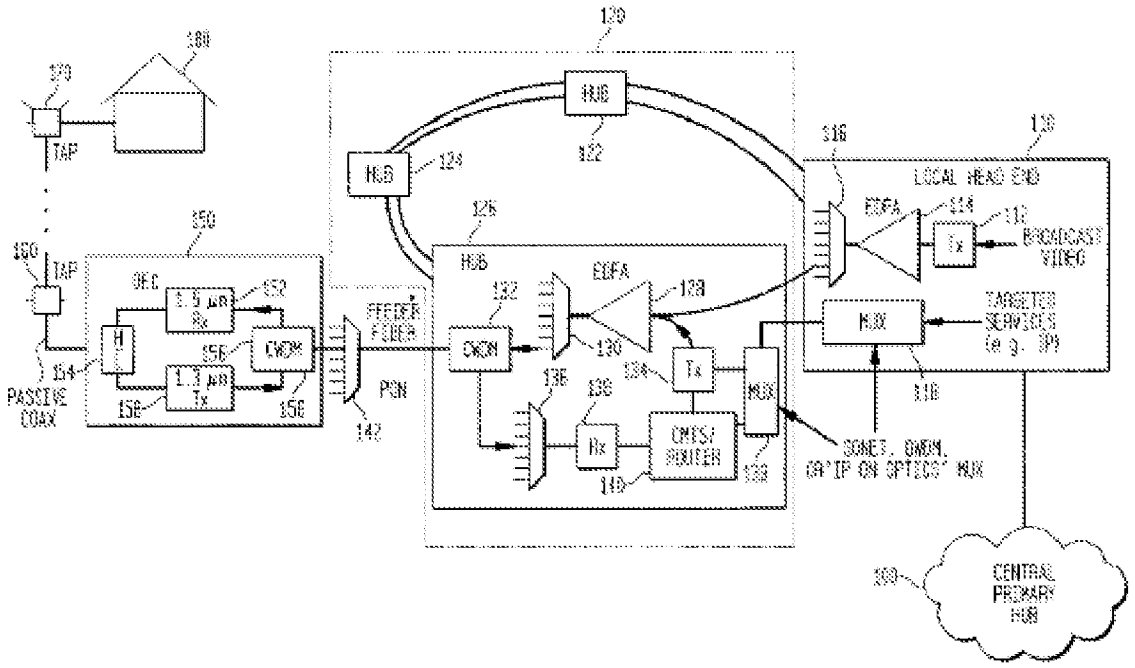

Figure 1 discloses a simplified block diagram of an optical communications network architecture for fiber to the home/curb communications.

6. A local headend (110) receives baseband video signals from a central primary hub (100). The local headend (110) includes a transmitter (112) which receives broadcast video signals. The broadcast signals are then amplified by an optical amplifier (114-EDFA) that amplifies the optical broadcast signals without the need to convert them to electrical signals. The amplified signal is then processed through an optical splitter (116). The local headend also includes a multiplexer (118) that receives target services such as internet protocol data and narrowcast video channels (col. 3, l. 59–col. 4, l. 4).

7. The signals from the local headend are transported to a path-redundant supertrunking ring (120) comprised of hubs (122, 124, and 126). Each of the outputs of the optical splitter (116) connects with one of the hubs. The targeted services from the multiplexer (118) connect to the hubs over separate fibers (col. 4, ll. 5-22).

8. Hub (126) has a downstream broadcast video path with an EDFA amplifier (128) having its output connected to an optical splitter (130). Each output of the optical splitter (130) is connected to a coarse wavelength division multiplexer (132-CWDM) that combines multiple signals at various wavelengths for transmission along fiber optic cables (col. 4, ll. 23-28).

9. A targeted services path has an outgoing downstream path which sends targeted service signals through the multiplexer (133) to transmitter (134) to a coarse wavelength division multiplexer (132-CWDM) (col. 4, ll. 28-33).

10. Hub (126) amplifies both downstream broadcast video and targeted services signals and combines them to a composite optical signal which is transmitted through the coarse wavelength division multiplexer (132-CWDM) to an optical electrical converter (150-OEC) (col. 4, ll. 33-38).

11. The target services signal has an upstream path which receives signals from the coarse wavelength division multiplexer (132-CWDM) and that travels through an optical combiner (136) to a receiver (138) and then into a cable modem termination system and router (140) (col. 4, ll. 39-43).

12. The invention employs passive optical networks (142-PON), along with an optical splitter, feeder, and distribution fiber as opposed to hybrid fiber coaxial systems that use dedicated downstream and upstream feeder fibers requiring the installation of a large amount of fiber (col. 4, ll. 44-49).

13. Each passive optical network (142-PON) carries bi-directional signals (1.5 µm/1.3 µm) via coarse wavelength division multiplexing between coarse wavelength division multiplexer (132) and coarse wavelength division multiplexer (156) of the optical electrical converter (150) (col. 4, ll. 50-53).

14. The optical electrical converter (150-OEC) converts downstream optical signals from hub (126) to electrical signals and then transmits them over coax to the subscribers. The optical electrical converter (150-OEC) converts upstream electrical signals from the subscribers into optical signals for transmission back to the hub (126) (col. 4, l. 66–col. 5, l. 4).

15. The broadcast and inserted targeted services wavelengths are different in order to prevent interference noise. The insertion of the targeted services signals into the broadcast signal occurs in the hub (126) prior to the last amplifiers (col. 5, ll. 25-45).

16. The upstream signal at 1.3µm uses the coarse wavelength division multiplexer to utilize the same fiber as the downstream signal. The optical power downstream exceeds that of the upstream signal (col. 5, ll. 51-65).

PRINCIPLES OF LAW

"[T]he PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)). "Moreover, limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (citing *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989)).

"'A prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art.'" *In re Bell*, 991 F.2d 781, 783 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976)).

If the Examiner's burden is met, the burden then shifts to Appellant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

One cannot show nonobviousness by attacking the references individually where the rejections are based upon combinations of references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

ANALYSIS

Claims 1-5

Appellant argues that the combination of Beveridge and Feldman fails to disclose all of the claim limitations, and therefore fails to establish a prima facie case of obviousness (App. Br. 11). Appellant indicates that

claim limitations regarding transmitting light at a first wavelength carrying plain old telephone signals and at a second wavelength carrying television signals through an optical fiber from the first to second end is not disclosed by the cited art (App. Br. 11). The Examiner maintains that the wavelengths of the broadcast and the inserted target services signals must be different in order to prevent interference between the wavelengths (Ans. 10).

The Examiner states that the combination of Beveridge and Feldman discloses the light transmissions at multiple wavelengths as the claimed invention (Ans. 3-5). Beveridge discloses a fiber/coax transport architecture where telephony and video signals are transported through a common network (FF 1-4). It is the Examiner's position that Beveridge fails to disclose light transmissions at multiple wavelengths carrying both plain old telephone signals and television signals through an optic fiber (Ans. 3). However, the Examiner cites Feldman as an obvious modification to Beveridge (Ans. 4-5).

Feldman discloses a fiber-to-the-home/curb access system for providing broadband communications (FF 5-16). Feldman employs passive optical networks that carry bi-directional light signals at multiple wavelengths (downstream/upstream) (FF 13-14). The Examiner is relying upon Feldman's bidirectional signals to disclose the claimed invention's use of light signals at multiple wavelengths carrying both plain old telephone and television information through an optic fiber (Ans. 11-12). However, Feldman's bidirectional signals are not equivalents of Appellant's downstream light transmissions at multiple wavelengths. Feldman uses only one light transmitted signal for the downstream transmission (FF 5, 7-14). Feldman's one transmitted light signal carries both the target services and

the broadcast information (FF 15). The claimed invention requires at least two downstream light transmitted signals, one signal carrying plain old telephone information and another signal carrying television information (*see* App. Br. 4-5).

The Examiner argues that Feldman discloses that the wavelengths of the broadcast and inserted targeted services signals must be different in order to prevent interference noise (Ans. 10). We agree with the Examiner's assertion, but different wavelengths of the broadcast and inserted targeted services electrical signals do not disclose multiple light transmitted downstream signals required by Appellant's claimed invention (*see* App. Br. 4-5). Although Feldman's two electrical signals are different in order of wavelength, they are still transmitted on only one light signal downstream of one order and one light signal upstream of a different order, respectively (FF 15-16). The wavelength differential between Feldman's upstream and downstream light transmitted signals does not address the deficiencies of Beveridge for the reasons stated previously.

We thereby find error in the Examiner's rejection of claims 1-5 under 35 U.S.C. § 103 and will not sustain the rejection over Beveridge and Feldman.

Claim 7

Claim 7 stands rejected as unpatentable over the combination of Beveridge, Feldman, and Kitazawa.

The Examiner indicates that the combination of Beveridge and Feldman meets all of the limitations of claim 7, with the exception of TCM bi-directional telephonic signals transmissions through a HFC network (Ans. 6). The Examiner uses Kitazawa to address the deficiencies of the

Beveridge and Feldman combination (Ans. 6). Claim 7 requires an apparatus that will convert light transmitted signals at two wavelengths into a unidirectional electrical TV signal and a bi-directional plain old telephone service electrical signal (App. Br. 5-7).

The combination of Beveridge and Feldman does not disclose an apparatus that converts light transmitted signals at two wavelengths into two electrical signals. As we discussed previously, Feldman is designed to address multiple light signals at different wavelengths but only in regards to upstream and downstream comparisons.

The apparatus disclosed in claim 7 processes two downstream transmitted light signals at different wavelengths and the combination of Beveridge and Feldman does not disclose this feature. Kitazawa does not cure the deficiencies of the Beveridge and Feldman combination.

We thereby find error in the Examiner's rejection of claim 7 under 35 U.S.C. § 103 and will not sustain the rejection over Beveridge, Feldman, and Kitazawa.

CONCLUSIONS OF LAW

1. Appellant has shown that the Examiner erred in finding that the combination of Beveridge and Feldman discloses a method of providing TV and telephonic signals to multiple subscribers over a single optical fiber by employing two light transmitted signals at two wavelengths.
2. Appellant has shown that the Examiner erred in finding that the combination of Beveridge, Feldman, and Kitazawa discloses an apparatus that will convert light transmitted signals at two wavelengths into a

unidirectional electrical TV signal and a bi-directional plain old telephone service electrical signal.

DECISION

We will not sustain the decision of the Examiner to reject claims 1-5 and 7.

REVERSED

babc

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